REMARKS

I. Summary of Office Action

Claims 1-23 were pending with Claims 1, 2, 13, and 23 being independent.

On April 13, 2007, the Patent Office mailed a non-final Office Action in which the Examiner objected to claims 1 and 13 under 37 C.F.R. § 1.75 for including the phrase "at at". Claims 14-22 were objected to for depending from claim 13.

Claims 1 and 23 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Litwin, Jr. *et al.* U.S. Patent No. 6,834,091 ("Litwin").

Claims 2-7, 9-18 ,* and 20-23 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious from Litwin in view of Schőbinger *et al.* "A Low-Cost Point-to-Multi-Point Access System Based on OFDM Transmission," IEEE, 0-7803-7448-7/02, 2002 ("Schőbinger").

Claims 8 and 19 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious from Litwin and Schőbinger in view of Blahut U.S. Patent No. 6,778,550 ("Blahut").

II. Summary of Applicants' Response

Applicants have canceled independent claims 1 and 23 without prejudice. Thus, the rejections of claims 1 and 23 under 35 U.S.C. § 102(b) are moot and will not be further addressed.

Applicants have amended independent claim 13 to replace "at at" with --by at-- to address the Examiner's objection under 37 C.F.R. § 1.75. Accordingly, the Examiner is respectfully requested to withdraw the objection to independent claim 13 and corresponding dependent

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* Although the Office Action purports to reject claims "... 8-18 ..." under Section 103(a) in view of Litwin and Schőbinger (Page 4, ¶ 7; emphasis added), Applicants believe the Examiner intended to reject claims 9-19 in this regard because the Examiner acknowledges on page 9, paragraph 8 that Litwin and Schőbinger fail to disclose or suggest the features of claim 8. If Applicants' belief is incorrect, Applicants respectfully request clarification from the Examiner in the next Office Action.

claims 14-22.

Applicants also have amended independent claims 2 and 13 and added new dependent claims 24-35. No new matter has been added.

The Examiner is respectfully requested to withdraw the rejections under 35 U.S.C. § 103(a) in view of the following remarks.

III. 35 U.S.C. § 103(a)

Independent claims 2 and 13 are directed to a method and system, respectively, for transmitting power line communications ("PLC") signals between a head-end PLC transceiver and a plurality of remote PLC transceivers. Claim 2 requires, *inter alia*, establishing a timing controlled PLC data signal communications frame having a predetermined duration, where the timing frame includes a downstream time slot assigned for transmission of PLC data signals from the head-end to at least of one of the remotes and at least one upstream time slot assigned for transmission of PLC data signals from at least one of the remotes to the head-end. PLC signals are transmitted between the head-end and at least one of the remotes in accordance with the timing frame. Claim 13 recites similar features. Claim 2 has been amended to recite that the transmitting comprises "isolating the plurality of remote PLC transceivers from each other during the at least one upstream time slot to prevent any of the plurality of remote PLC transceivers from detecting and decoding content from any other of the remote PLC transceivers." Similarly, claim 13 has been amended to recite that "the plurality of remote PLC transceivers is isolated from each other during the at least one upstream time slot to prevent any of the plurality of remote PLC transceivers from detecting and decoding content from any other of the remote PLC transceivers."

No new matter has been added and the amendments are fully supported and justified by the

application as originally filed. For example, paragraph [0033] of Applicants' originally-filed specification describes that upstream transmission may include content such as keystrokes and mouse clicks entered by a user with a remote control. Additionally, paragraphs [0027] and [0028] of Applicants' originally-filed specification describe two approaches for isolating remote PLC transceivers from one another during the upstream portion of the timing frame. As described in originally-filed paragraph [0027], reproduced below for the Examiner's convenience, when one of the plurality of remote PLC transceivers is transmitting during the upstream portion of the communications frame, the remaining PLC transceivers are de-activated in order to prevent them from receiving the transmission. Thus, private and secure data transmissions are achieved.

> [0027] Based on the timing frame configuration, the receiver of a remote is only active in receive mode during frame portions assigned to downstream transmission and is not active during frame portions when other remotes may be transmitting upstream. Therefore, one remote cannot correctly detect and decode a transmission from another remote. As a result, the inventive timing controlled PLC signal transmission configuration isolates the remotes from one another, such that private and secure data transmissions in the system are achieved.

This approach is claimed in new dependent claims 24 and 30, which depend respectively from independent claims 2 and 13.

As described in originally-filed paragraph [0028], also reproduced below for the Examiner's convenience, when the plurality of remote PLC transceivers transmit signals to the head-end PLC transceiver during the upstream portion of the frame, isolation of the plurality of remote PLC transceivers can be achieved by using a different combination of one or more carriers and one or more symbol lengths for each of the plurality of remote PLC transceivers.

> [0028] In a preferred embodiment of the PLC system 10, such as illustrated in FIG. 1, a downstream OFDM signal that the head-end transmitter 20 transmits to the remote receivers 86 has more carriers and longer symbols than the number of carriers and lengths of symbols, respectively, of upstream OFDM signals that the remote transmitters 80 transmit to the head-end receiver 26.

> These differences in OFDM signal parameters can also provide for isolation among the remotes.

This approach is claimed in new dependent claims 27 and 33, which depend respectively from independent claims 2 and 13.

Litwin describes a system that includes a plurality of devices, where each device includes a powerline modem and a clock circuit for synchronizing a data rate (Abstract; FIG. 1). The synchronization signal is transmitted over the system on a carrier operating at a frequency that is different from the data carriers (Abstract; col. 1, ll. 51-54). A synchronization procedure is described whereby, in response to receipt of a time stamp from a master device, slave devices take turns transmitting sound-offs (i.e., control data) to the master device to manifest errors in the slaves' synchronization (FIG. 2; col. 3, ll. 45-56).

Schőbinger describes a system for point-to-multi-point transmission based on OFDM transmission in a shared medium such as power lines (p. 417, Abstract and Introduction, ¶ 1). The system includes a master and multiple slaves (p. 418, Section 2.2, ¶ 2). Communications in the system are between the master and slaves only with "no direct slave-to-slave communication," which means that "no ad-hoc networking can be set up between some slaves only" in the system (p. 418, Section 2.2, ¶ 2 and top of second column).

Blahut describes a method and apparatus for upstream and downstream communications using TDM/TDMA (Abstract). The length of each upstream burst is determined in accordance with the actual bandwidth requirements of the transmitting end user terminal, instead of setting the length of each upstream burst at a fixed length (Col. 2, ll. 41-46). Upstream data can be sent by multiple end-user terminals during different time slots (Col. 1, ll. 33-37).

Applicants respectfully submit that Litwin, Schőbinger, and Blahut, taken alone or in any combination, do not teach or suggest, *inter alia*, Applicants' claimed feature of "isolating the

plurality of remote PLC transceivers from each other during the at least one upstream time slot to prevent any of the plurality of remote PLC transceivers from detecting and decoding content from any other of the remote PLC transceivers," as is required by Applicants' independent claim 2. Similarly, these references do not teach or suggest a "plurality of remote PLC transceivers [that] is isolated from each other during the at least one upstream time slot to prevent any of the plurality of remote PLC transceivers from detecting and decoding content from any other of the remote PLC transceivers," as is required by Applicants' independent claim 13.

Rather, Litwin describes a system in which slaves take turns transmitting "sound-offs" to a master device for synchronization. However, these sound-offs include control data only, not "content" as is required by the claims. Additionally, although the slaves' transmissions to the master alternate over time, there is no teaching or suggestion in Litwin to isolate the slaves so that when any of the slaves is transmitting the other slaves are prevented from detecting and decoding that transmission.

Schőbinger and Blahut have similar deficiencies. Blahut states that upstream data can be sent by end-user terminals during different time slots, but like Litwin, there is no teaching or suggestion to isolate the end-user terminals so that when any of the terminals is transmitting the other terminals are prevented from detecting and decoding that transmission. In Schőbinger, it is stated that no slave-to-slave communications are permitted. However, this merely relates to preventing the formation of ad-hoc networks of slaves only. It does not teach or suggest isolation of the slaves such that when any of the slaves is transmitting to the master the other slaves are prevented from detecting and decoding that transmission.

In view of the foregoing, the Examiner is respectfully requested to withdraw the

rejections under 35 U.S.C. § 103(a) of claims 2, 13, and their respective dependent claims.

IV. New Dependent Claims 24-35

Applicants have added new dependent Claims 24-35 for the Examiner's consideration. No new matter has been added and new dependent Claims 24-35 are fully supported and justified by the application as originally filed.

Support for new dependent Claims 24 and 30 can be found in the originally-filed application in at least, for example, paragraph [0027]. New dependent claims 24 and 30, which are referenced above in Section III of this response, are also patentable over the references of record because the references do not teach or suggest the claimed approach for isolating remote PLC transceivers of "when one of the plurality of remote PLC transceivers is transmitting during the at least one upstream time slot of the communications frame, de-activating the other PLC transceivers of the plurality of remote PLC transceivers to prevent the other PLC transceivers from receiving the transmission" (claim 24). Claim 30 recites similar features.

Support for new dependent claims 25 and 26, which depend from new dependent claim 24, and new dependent claims 31 and 32, which depend from new dependent claim 30, can be found in the originally-filed application in at least, for example, paragraph [0024]. New dependent claims 25, 26, 31, and 32 are patentable over the references of record for at least the above-described reasons that claims 2, 13, 24, and 30 are patentable over the references of record.

Support for new dependent Claims 27 and 33 can be found in the originally-filed application in at least, for example, paragraph [0028]. New dependent claims 27 and 33, which are referenced above in Section III of this response, are also patentable over the references of record because the references do not teach or suggest the claimed approach for isolating remote PLC

transceivers of configuring "each of the plurality of remote PLC transceivers … to use a different combination of one or more carriers and one or more symbol lengths for transmitting PLC signals to the head-end PLC transceiver" (claim 33). Claim 27 recites similar features.

Support for new dependent claims 28 and 34 can be found in the originally-filed application in at least, for example, paragraph [0033]. New dependent claims 28 and 34 are patentable over the references of record for at least the above-described reasons that claims 2 and 13 are patentable over the references of record.

Support for new dependent claims 29 and 35 can be found in the originally-filed application in at least, for example, paragraphs [0030] and [0033]. New dependent claims 29 and 35 are patentable over the references of record for at least the above-described reasons that claims 2 and 13, 24 are patentable over the references of record.

V. Conclusion

This response attends to each point noted by the Examiner. Claims 2-22 and 24-35 currently pending in this case are proper and patentable. Allowance is respectfully requested. However, should the Examiner deem that further clarification of the record is in order, we invite a telephone call to the undersigned attorneys prior to the issuance of the next office action to

expedite further processing of the claims to allowance.

Respectfully submitted,

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